

CHAPTER 7

Wisconsin Expenditures for Energy

Well-Rooted in Green Products and Processes

Pace Industries, Inc

As a large manufacturer in a small Wisconsin community, Pace understood from early-on that reducing waste and conserving energy made for happy neighbors and an efficient operation. Pace continues to lead with environmentally-friendly practices and products that focus on the four Rs—Reduce, Reuse, Recycle, and Replace.

The Products. A movement toward reduction of energy and raw materials set Pace on a mission to engineer materials that allow printers and finishers to get more sheets (or linear feet) for the same weight and feel, while maintaining the process characteristics of traditional plastics. The results are products that enable customers to meet their design, sustainability, and/or cost needs.

Pace's exclusive product line-up include:

- Classi-Card® allows for styrene weight reduction.
- POLYGRAPH.ics provides weight and disposal benefits over PVC and other plastics.
- BIOGRAPH.ics™ is an agri-based plastic (non-petroleum), compostable alternative.
- Absolve, PE, PP, PS alternatives, are recyclable and compostable.

The Process. Responsible manufacturing is the Pace mantra. Environmental efforts emphasize:

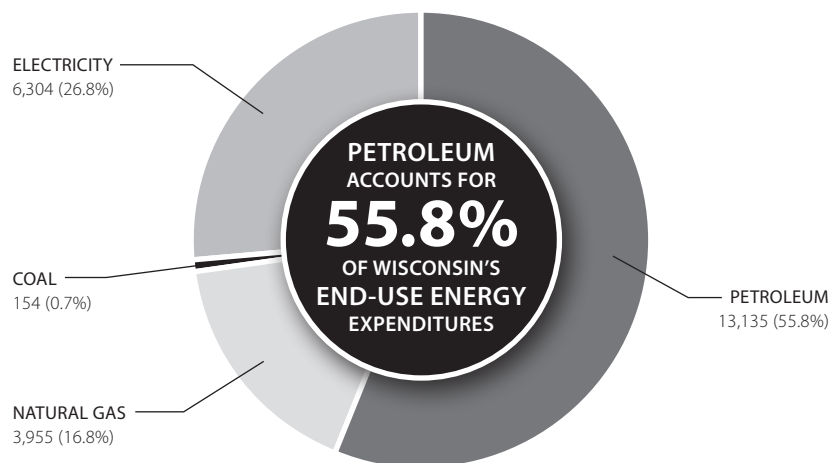
- Renewable energy usage – Pace is an EPA Green Power Partner.



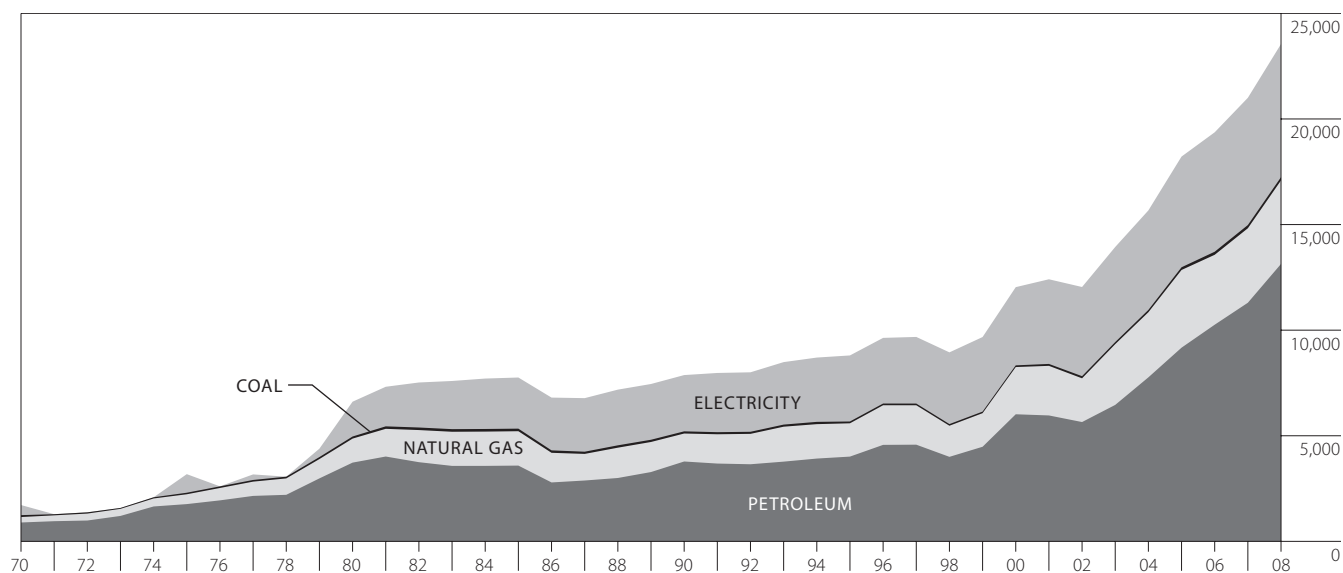
- Energy and efficiency audits.
- Reuse and rework of pallet and packaging material including (1) recycling programs, internally and for customers, to reclaim plastic, office materials, and nonreusable packaging, and (2) coordination of inbound and outbound shipments to reduce fuel consumption and CO₂ emissions.

Wisconsin End-Use Energy Expenditures, by Type of Fuel

2008 MILLIONS OF DOLLARS AND PERCENT OF TOTAL



1970-2008 MILLIONS OF DOLLARS



Source: Wisconsin Office of Energy Independence.

Wisconsin End-Use Energy Expenditures, by Type of Fuel

1970-2008 MILLIONS OF DOLLARS AND PERCENT OF TOTAL

Year	Petroleum		Natural Gas		Coal		Electricity		Total
1970	893.7	52.0%	257.2	15.2%	91.3	5.4%	477.6	28.3%	1,719.7
1975	1,764.4	55.4%	465.1	14.6%	73.2	2.3%	879.3	27.6%	3,182.1
1980	3,728.3	56.4%	1,137.4	17.2%	99.3	1.5%	1,648.0	24.9%	6,613.0
1985	3,587.6	46.2%	1,628.0	21.0%	121.6	1.6%	2,420.9	31.2%	7,758.1
1990	3,781.6	48.0%	1,324.4	16.8%	102.9	1.3%	2,664.5	33.8%	7,873.5
1995	4,013.4	45.6%	1,576.7	17.9%	85.6	1.0%	3,127.5	35.5%	8,803.2
1996	4,568.5	47.4%	1,876.5	19.5%	81.3	0.8%	3,108.1	32.3%	9,634.4
1997	4,577.7	47.3%	1,866.1	19.3%	80.3	0.8%	3,155.2	32.6%	9,679.4
1998	4,001.6	44.7%	1,473.0	16.5%	78.3	0.9%	3,395.6	37.9%	8,948.6
1999	4,479.0	46.3%	1,590.9	16.4%	74.3	0.8%	3,530.2	36.5%	9,674.4
2000	6,017.5	50.0%	2,235.9	18.6%	80.1	0.7%	3,703.2	30.8%	12,036.7
2001	5,961.8	48.0%	2,348.8	18.9%	90.9	0.7%	4,007.5	32.3%	12,409.1
2002	5,649.3	46.9%	2,070.4	17.2%	101.5	0.8%	4,222.1	35.1%	12,043.3
2003	6,460.9	46.4%	2,876.7	20.6%	98.7	0.7%	4,502.4	32.3%	13,938.7
2004	7,765.6	49.6%	3,082.8	19.7%	109.2	0.7%	4,712.5	30.1%	15,670.1
2005	9,171.1	50.3%	3,678.9	20.2%	128.3	0.7%	5,241.7	28.8%	18,219.9
2006	10,257.9	53.0%	3,310.4	17.1%	145.1	0.7%	5,654.9	29.2%	19,368.4
2007 ^r	11,298.0	53.8%	3,527.1	16.8%	151.7	0.7%	6,025.1	28.7%	21,001.9
2008 ^p	13,135.5	55.8%	3,955.0	16.8%	153.8	0.7%	6,303.7	26.8%	23,547.9

WISCONSIN'S
OVERALL
ENERGY BILL
12.1%

In 2008, Wisconsin's overall energy bill set a new record of more than \$23.5 billion, an increase of \$2.5 billion (12.1 percent) over 2007. Expenditures increased for all fuels. Since 2000, Wisconsin's total energy expenditures increased by \$11.5 billion—almost double (95.6 percent increase).

The tables in this chapter show annual expenditures for the major energy resources used by Wisconsin's residential, commercial, industrial, agricultural and transportation sectors since 1970.

Because consistent and reliable historic prices of wood, waste fuels and biogas are not available, expenditures for these fuels are excluded from the tables.

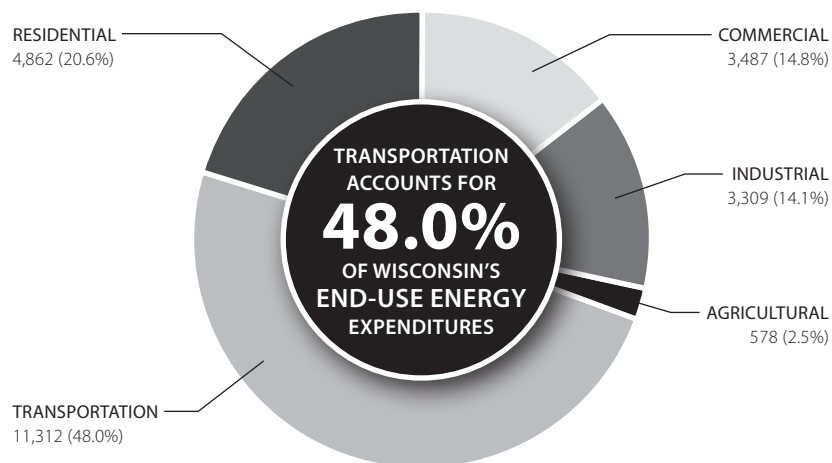
^r Revised due to revisions in price and consumption data.

^p Preliminary estimates.

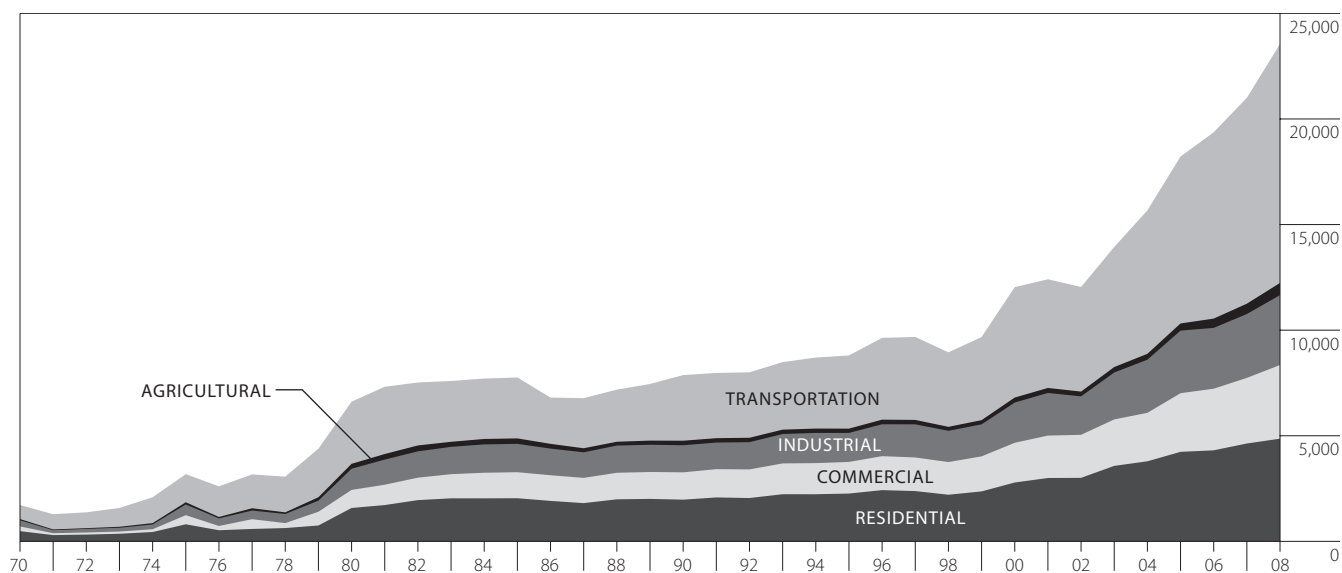
Source: Compiled from tables in this publication for Wisconsin petroleum, natural gas, coal and electricity use and prices, by economic sector.

Wisconsin End-Use Energy Expenditures, by Economic Sector

2008 MILLIONS OF DOLLARS AND PERCENT OF TOTAL



1970-2008 MILLIONS OF DOLLARS



Source: Wisconsin Office of Energy Independence.

Wisconsin End-Use Energy Expenditures, by Economic Sector

1970-2008 MILLIONS OF DOLLARS AND PERCENT OF TOTAL

Year	Residential		Commercial		Industrial		Agricultural		Transportation		Total
1970	482.4	28.1%	224.4	13.0%	290.6	16.9%	58.7	3.4%	663.7	38.6%	1,719.7
1975	808.2	25.4%	431.6	13.6%	506.8	15.9%	104.9	3.3%	1330.6	41.8%	3,182.1
1980	1,580.2	23.9%	856.1	12.9%	1,002.6	15.2%	232.4	3.5%	2,941.6	44.5%	6,613.0
1985	2,041.8	26.3%	1,232.7	15.9%	1,342.3	17.3%	258.8	3.3%	2,882.6	37.2%	7,758.1
1990	1,974.1	25.1%	1,294.2	16.4%	1,282.1	16.3%	215.2	2.7%	3,107.9	39.5%	7,873.5
1995	2,263.5	25.7%	1,496.8	17.0%	1,374.0	15.6%	202.7	2.3%	3,466.3	39.4%	8,803.2
1996	2,425.3	25.2%	1,608.9	16.7%	1,510.1	15.7%	218.6	2.3%	3,871.5	40.2%	9,634.4
1997	2,380.9	24.6%	1,591.3	16.4%	1,568.4	16.2%	209.7	2.2%	3,929.0	40.6%	9,679.4
1998	2,207.4	24.7%	1,547.4	17.3%	1,479.8	16.5%	187.2	2.1%	3,526.7	39.4%	8,948.6
1999	2,365.1	24.4%	1,659.5	17.2%	1,515.6	15.7%	200.0	2.1%	3,934.2	40.7%	9,674.4
2000	2,786.9	23.2%	1,881.1	15.6%	1,904.4	15.8%	237.0	2.0%	5,227.3	43.4%	12,036.7
2001	2,999.6	24.2%	2,009.5	16.2%	2,019.4	16.3%	234.9	1.9%	5,145.7	41.5%	12,409.1
2002	3,007.7	25.0%	2,037.1	16.9%	1,819.4	15.1%	227.1	1.9%	4,952.1	41.1%	12,043.3
2003	3,574.3	25.6%	2,198.5	15.8%	2,222.8	15.9%	258.2	1.9%	5,684.8	40.8%	13,938.7
2004	3,790.3	24.2%	2,295.1	14.6%	2,516.2	16.1%	277.7	1.8%	6,790.8	43.3%	15,670.1
2005	4,238.2	23.3%	2,777.0	15.2%	2,963.5	16.3%	339.4	1.9%	7,901.8	43.4%	18,219.9
2006	4,310.5	22.3%	2,917.4	15.1%	2,879.2	14.9%	439.8	2.3%	8,821.4	45.5%	19,368.4
2007 ^r	4,633.7	22.1%	3,106.3	14.8%	3,024.6	14.4%	489.2	2.3%	9,748.1	46.4%	21,001.9
2008 ^p	4,862.1	20.6%	3,487.1	14.8%	3,308.7	14.1%	577.9	2.5%	11,312.0	48.0%	23,547.9

WISCONSIN'S
ENERGY
EXPENDITURES
INCREASED
IN ALL
SECTORS

In 2008,
energy expenditures
increased in all sectors,
with total expenditures
increasing \$2.5 billion
or 12.1 percent.

^r Revised due to revisions in price and consumption data.

^p Preliminary estimates.

Source: Compiled from tables in this publication for Wisconsin residential, commercial, industrial, agricultural and transportation energy use and prices, by type of fuel.

Wisconsin Expenditures for Residential Energy, by Type of Fuel

WISCONSIN'S
OVERALL
RESIDENTIAL
ENERGY
EXPENDITURES
4.9%

In 2008, overall residential energy expenditures increased by 4.9 percent (\$228.4 million) over 2007. Expenditures for all fuel types increased, with the exception of coal.

1970-2008 MILLIONS OF DOLLARS AND PERCENT OF TOTAL

Year	Petroleum		Natural Gas		Coal		Electricity		Total ^a
1970	142.6	29.6%	132.4	27.4%	15.5	3.2%	191.9	39.8%	482.4
1975	250.5	31.0%	203.8	25.2%	11.8	1.5%	342.0	42.3%	808.2
1980	483.8	30.6%	473.1	29.9%	9.0	0.6%	614.4	38.9%	1,580.2
1985	393.7	19.3%	752.1	36.8%	3.8	0.2%	892.2	43.7%	2,041.8
1990	342.9	17.4%	652.6	33.1%	1.3	0.1%	977.3	49.5%	1,974.1
1995	282.7	12.5%	792.0	35.0%	1.1	0.0%	1,187.7	52.5%	2,263.5
1996	357.9	14.8%	889.8	36.7%	1.0	0.0%	1,176.5	48.5%	2,425.3
1997	336.1	14.1%	878.7	36.9%	1.0	0.0%	1,165.1	48.9%	2,380.9
1998	237.6	10.8%	712.6	32.3%	0.9	0.0%	1,256.3	56.9%	2,207.4
1999	265.3	11.2%	787.5	33.3%	0.8	0.0%	1,311.6	55.5%	2,365.1
2000	394.1	14.1%	1,021.6	36.7%	0.7	0.0%	1,370.4	49.2%	2,786.9
2001	402.8	13.4%	1,095.9	36.5%	0.7	0.0%	1,500.2	50.0%	2,999.6
2002	359.0	11.9%	1,009.6	33.6%	0.7	0.0%	1,638.5	54.5%	3,007.7
2003	404.9	11.3%	1,316.5	36.8%	0.6	0.0%	1,852.3	51.8%	3,574.3
2004	505.0	13.3%	1,369.2	36.1%	0.6	0.0%	1,915.6	50.5%	3,790.3
2005	607.6	14.3%	1,564.2	36.9%	0.6	0.0%	2,065.8	48.7%	4,238.2
2006	650.6	15.1%	1,468.9	34.1%	0.5	0.0%	2,190.5	50.8%	4,310.5
2007 ^r	668.0	14.4%	1,633.2	35.2%	0.4	0.0%	2,332.0	50.3%	4,633.7
2008 ^p	788.1	16.2%	1,648.1	33.9%	0.0	0.0%	2,426.0	49.9%	4,862.1

^a Does not include renewable energy, except those renewable fuels used in electricity production.

^r Revised due to revisions in price and consumption data.

^p Preliminary estimates.

Source: Compiled from tables in this publication for Wisconsin residential energy use and prices.

Wisconsin Expenditures for Commercial Energy, by Type of Fuel

1970-2008 MILLIONS OF DOLLARS AND PERCENT OF TOTAL

Year	Petroleum		Natural Gas		Coal		Electricity		Total
1970	34.7	15.4%	40.9	18.2%	11.7	5.2%	137.1	61.1%	224.4
1975	70.8	16.4%	78.7	18.2%	9.1	2.1%	273.0	63.3%	431.6
1980	82.4	9.6%	210.6	24.6%	7.7	0.9%	555.4	64.9%	856.1
1985	104.5	8.5%	311.0	25.2%	9.3	0.8%	807.9	65.5%	1,232.7
1990	92.9	7.2%	279.5	21.6%	8.2	0.6%	913.7	70.6%	1,294.2
1995	73.7	4.9%	374.1	25.0%	6.2	0.4%	1,042.8	69.7%	1,496.8
1996	95.6	5.9%	449.7	28.0%	7.8	0.5%	1,055.8	65.6%	1,608.9
1997	85.0	5.3%	441.3	27.7%	7.7	0.5%	1,057.3	66.4%	1,591.3
1998	57.7	3.7%	346.9	22.4%	7.9	0.5%	1,134.9	73.3%	1,547.4
1999	66.5	4.0%	363.1	21.9%	8.0	0.5%	1,221.9	73.6%	1,659.5
2000	103.6	5.5%	480.8	25.6%	8.0	0.4%	1,288.7	68.5%	1,881.1
2001	104.1	5.2%	526.4	26.2%	8.6	0.4%	1,370.3	68.2%	2,009.5
2002	91.3	4.5%	479.2	23.5%	8.8	0.4%	1,457.8	71.6%	2,037.1
2003	125.2	5.7%	666.2	30.3%	9.2	0.4%	1,397.9	63.6%	2,198.5
2004	150.1	6.5%	690.5	30.1%	10.0	0.4%	1,444.5	62.9%	2,295.1
2005	202.2	7.3%	877.6	31.6%	12.2	0.4%	1,684.9	60.7%	2,777.0
2006	192.8	6.6%	850.4	29.1%	13.6	0.5%	1,860.7	63.8%	2,917.4
2007 ^r	204.2	6.6%	884.4	28.5%	11.6	0.4%	2,006.1	64.6%	3,106.3
2008 ^p	300.1	8.6%	1057.9	30.3%	8.1	0.2%	2,121.0	60.8%	3,487.1

WISCONSIN
EXPENDITURES
FOR
COMMERCIAL
ENERGY
12.3%

Commercial energy expenditures increased 12.3 percent (\$380.6 million) in 2008.

Commercial energy expenditures are dominated by electricity used for lighting, cooling, ventilation and office equipment. Electricity use increased slightly which combined with higher electricity prices caused electricity expenditures to increase 5.7 percent.

^r Revised due to revisions in price and consumption data.

^p Preliminary estimates.

Source: Compiled from tables in this publication for Wisconsin commercial energy use and prices.

Wisconsin Expenditures for Industrial Energy, by Type of Fuel

WISCONSIN
EXPENDITURES
FOR
INDUSTRIAL
ENERGY
9.4%

In 2008, industrial energy expenditures increased 9.4 percent (\$284.2 million). Industrial energy use is dominated by electricity and natural gas. Expenditures on electricity, natural gas and coal increased by 3.3, 23.7 and 4.4 percent respectively. Petroleum expenditures decreased by 4.3 percent.

1970-2008 MILLIONS OF DOLLARS AND PERCENT OF TOTAL

Year	Petroleum		Natural Gas		Coal		Electricity		Total
1970	18.7	6.4%	83.8	28.9%	64.1	22.1%	124.0	42.7%	290.6
1975	46.7	9.2%	182.6	36.0%	52.4	10.3%	225.1	44.4%	506.8
1980	64.1	6.4%	453.7	45.3%	82.6	8.2%	402.1	40.1%	1,002.6
1985	58.3	4.3%	564.9	42.1%	108.5	8.1%	610.6	45.5%	1,342.3
1990	117.8	9.2%	392.3	30.6%	93.5	7.3%	678.5	52.9%	1,282.1
1995	80.3	5.8%	410.6	29.9%	78.3	5.7%	804.8	58.6%	1,374.0
1996	114.9	7.6%	536.9	35.6%	72.5	4.8%	785.8	52.0%	1,510.1
1997	106.0	6.8%	546.1	34.8%	71.7	4.6%	844.6	53.8%	1,568.4
1998	84.3	5.7%	413.6	27.9%	69.5	4.7%	912.5	61.7%	1,479.8
1999	104.7	6.9%	440.4	29.1%	65.5	4.3%	905.0	59.7%	1,515.6
2000	149.0	7.8%	733.5	38.5%	71.3	3.7%	950.5	49.9%	1,904.4
2001	172.6	8.5%	726.5	36.0%	81.6	4.0%	1,038.7	51.4%	2,019.4
2002	121.0	6.6%	581.6	32.0%	92.0	5.1%	1,024.8	56.3%	1,819.4
2003	98.9	4.4%	894.0	40.2%	88.9	4.0%	1,141.1	51.3%	2,222.8
2004	150.8	6.0%	1,023.1	40.7%	98.6	3.9%	1,243.7	49.4%	2,516.2
2005	243.2	8.2%	1,237.0	41.7%	115.5	3.9%	1,367.8	46.2%	2,963.5
2006	285.0	9.9%	991.1	34.4%	131.1	4.6%	1,472.0	51.1%	2,879.2
2007 ^r	308.6	10.2%	1,009.5	33.4%	139.7	4.6%	1,566.9	51.8%	3,024.6
2008 ^p	295.2	8.9%	1,249.0	37.7%	145.7	4.4%	1,618.8	48.9%	3,308.7

^r Revised due to revisions in price and consumption data.

^p Preliminary estimates.

Source: Compiled from tables in this publication for Wisconsin industrial energy use and prices.

Wisconsin Expenditures for Agricultural Energy, by Type of Fuel

1970-2008 MILLIONS OF DOLLARS AND PERCENT OF TOTAL

Year	Motor Gasoline	Diesel Fuel ^a	LPG	Distillate and Kerosene	Total Petroleum		Electricity		Total
1970	19.1	9.8	5.2		34.1	58.1%	24.6	41.9%	58.7
1975	30.9	24.1	10.8		65.8	62.7%	39.1	37.3%	104.9
1980	38.7	94.8	22.9		156.4	67.3%	76.0	32.7%	232.4
1985	22.4	98.3	27.8		148.5	57.4%	110.3	42.6%	258.8
1990	9.6	88.1	22.4		120.1	55.8%	95.1	44.2%	215.2
1995	6.6	80.8	23.1		110.5	54.5%	92.2	45.5%	202.7
1996	6.5	87.4	34.7		128.6	58.8%	90.0	41.2%	218.6
1997	6.5	83.6	31.4		121.5	57.9%	88.2	42.1%	209.7
1998	5.4	71.3	18.6		95.3	50.9%	91.9	49.1%	187.2
1999	5.9	81.1	21.2		108.3	54.1%	91.7	45.9%	200.0
2000	7.1	108.8	27.5		143.4	60.5%	93.6	39.5%	237.0
2001	7.0	100.5	29.1		136.6	58.2%	98.3	41.8%	234.9
2002	6.4	94.7	24.9		126.0	55.5%	101.0	44.5%	227.1
2003	7.5	111.2	28.4		147.1	57.0%	111.2	43.0%	258.2
2004	9.0	126.5	33.4		169.0	60.9%	108.7	39.1%	277.7
2005	63.3	115.2	37.8		216.3	63.7%	123.2	36.3%	339.4
2006	60.1	199.5	48.5		308.1	70.1%	131.7	29.9%	439.8
2007 ^r	75.7	241.6	47.0	4.8	369.0	75.4%	120.1	24.6%	489.2
2008 ^p	70.4	289.8	73.6	6.2	440.0	76.1%	137.9	23.9%	577.9

^a Includes fuel oil and kerosene.

^r Revised due to revisions in price and consumption data.

^p Preliminary estimates.

Source: Compiled from tables in this publication for Wisconsin agricultural energy use and prices.

WISCONSIN'S
AGRICULTURAL
ENERGY BILL
18.1%

Wisconsin's agricultural energy bill is 18.1 percent more than 2007 due to increased fuel prices and increased, counted fuel volume.

Wisconsin Expenditures for Transportation Energy, by Type of Fuel

WISCONSIN'S
TRANSPORTATION
ENERGY BILL
16%

Wisconsin's transportation energy bill increased 16 percent (\$1,564 million dollars) in 2008. Vehicle gasoline accounts for almost three-quarters of transportation expenditures (72.4 percent), costing motorists almost \$8.2 billion.

1970-2008 MILLIONS OF DOLLARS

Year	Vehicle Gasoline ^a	Diesel Fuel	Aviation Gasoline	Jet Fuel	Middle Distillate	Residual Oil	Total
1970	625.9	22.7	2.4	5.9	6.3	0.4	663.7
1975	1,215.8	73.6	4.5	21.2	13.8	1.7	1,330.6
1980	2,512.2	307.6	8.4	72.7	37.8	3.0	2,941.6
1985	2,369.2	428.4	5.5	52.0	23.7	3.8	2,882.6
1990	2,429.1	573.1	6.1	71.5	25.0	3.1	3,107.9
1995	2,661.8	724.3	6.5	50.9	22.7	0.0	3,466.3
1996	2,974.7	798.0	7.1	62.5	29.2	0.0	3,871.5
1997	3,006.2	830.7	7.2	60.4	24.6	0.0	3,929.0
1998	2,692.2	761.4	6.0	47.6	19.6	0.0	3,526.7
1999	2,993.5	852.0	7.4	55.6	25.7	0.0	3,934.2
2000	3,994.0	1,101.5	8.7	85.3	37.8	0.0	5,227.3
2001	3,973.1	1,054.6	8.4	73.8	35.7	0.0	5,145.7
2002	3,844.1	997.7	6.6	72.2	31.5	0.0	4,952.1
2003	4,447.9	1,113.0	6.6	83.8	33.6	0.0	5,684.8
2004	5,228.9	1,388.3	7.8	121.4	44.4	0.0	6,790.8
2005	5,946.7	1,684.0	9.7	193.6	67.8	0.0	7,901.8
2006	6,550.7	1,964.7	9.8	213.2	83.1	0.0	8,821.4
2007 ^r	7,345.4	2,082.3	9.6	207.0	103.8	0.0	9,748.1
2008 ^p	8,191.7	2,667.5	10.5	332.8	109.5	0.0	11,312.0

^a Includes ethanol.

^r Revised due to revisions in price and consumption data.

^p Preliminary estimates.

Source: Compiled from tables in this publication for Wisconsin transportation energy use and prices.